COMPUTER-BASED ASSESSMENT OF WORD READING SKILLS

Andrea Magyar, Katalin Szili
Doctoral School of Education, University of Szeged

Keywords: technology-based assessment; word reading

Among the 21st century skills (*Molnár*, 2011) reading comprehension is one of the most important skills, an essential life skill. Assessments world-wide reveal serious problems with the reading competences of many young children. A thorough analysis of research results from all over the world revealed that the basic problem is the lack of word reading ability. For diagnosing the problem, at the end of the 20th century a paper-and-pencil (PP) based diagnostic test system was developed (*Nagy*, 2004). With the spread of computers, several new opportunities for testing methods were introduced (*Scheuermann*, 2010; *Csapó*, *Molnár* and *Nagy*, 2014) and made it possible to migrate the PP form to an electronic version, which has a number of advantages, such as objective administration, rapid response, precise control, immediate scoring, easy change of items and test formats and cheap development (*Williamson*, 2006).

The aim of this research was to explore these advantages among young children with the application of an online assessment tool. For this purpose we converted the original PP test to the new media and compared them by answering to the following questions: (1) does the change of media influence performance on the tests; (2) can the computer-based test version be applied effectively to the assessment of young children; (3) is there any difference in the operation of the test in different grades. The online test was constructed and delivered by the eDia platform and the data collection was carried out via internet by using computers' facilities available at schools. In the pilot sample 112 primary school pupils were involved. The pupils were from grades 2, 4 and 6 (N_{grade2}=35; N_{grade4}=45; N_{grade6}=32). For the analysis, classical test theory was applied. The online test proved suitable for the measurement of the vocabulary of young children. The reliability (Cronbach's α) of the original paper-and-pencil form was .95, and regarding the online test it was improved (.96). The average time children spent in the test was 38 minutes. The majority of children could finish the test, only in three cases were there missing data, so the test setting was suitable for them. The children's performance was between 46% and 93%. The differences between the means of grades were significant (M_{grade2}=71%, SD_{grade2}=11%; M_{grade4}=77%, SD_{grade4}=14%; M_{grade6}=83%, SD_{grade6}=5%), which implies that the test properly differentiated between grades.

The research was an example of how traditional paper and pencil based tests can be transformed into effective computer-based measurement tools and it encourages further research on the extension of computer-based assessment among young children.

This research was supported by the European Union and the State of Hungary, co-financed by the European Social Fund in the framework of TÁMOP 3.1.9-11/1-2012-0001 'Developing Diagnostic Assessments' project.